IMPROVED COOKSTOVES FOR COMMUNITIES

Document Prepared by Infinite Environmental Solutions Limited

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Project title	Improved Cookstoves for Communities
Project ID	2922
Monitoring period	01–January–2023 to 31–May–2024 (inclusive of both dates)
Original date of issue	06–June–2024
Most recent date of issue	16 – October – 2024
Version	1.2
***VCS Standard* Version**	4. 7
Prepared by	Infinite Environmental Solutions Limited Plot Number 128 FB, ring Road, Sector F, Scheme Number 94, Indore - 452016 (Madhya Pradesh), India

CONTENTS

1. PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

Outreach Projects Private Limited (OPPL) is the Project Proponent (PP) and Coordinating and Managing entity for the grouped project activity. Under this Grouped project activity there has been distribution and intended use of improve cookstove (ICS) by local community in the various states across India. Under the grouped project activity the improved cookstoves are distributed in the rural households in the state of Madhya Pradesh (batch 1) and Maharashtra (batch 2) of the instance 1. The improved cookstove is thereby, displacing the less efficient traditional cooking stoves used in the baseline scenario.

This project replaces the use of the traditional cookstoves that have low thermal efficiency and thus emitting the greenhouse gas emissions with a large number and cause. The implementation of the project activity has resulted in the reduction of firewood consumption & consequent emissions from combustion. Overall objectives of the grouped project activity are to reduce greenhouse gases emissions, conservation of forests and woodlands while improving the health conditions of ICS beneficiaries due to less emission and improve indoor air quality for everyday cooking.

Under the grouped project first instance, the project proponent Outreach Projects Private Limited, has distributed improved cookstoves manufactured by Swami Samarth Electronics Private Limited, Nashik, Maharashtra. The first batch of 9,200 improved cookstoves was distributed starting on 20-November-2021, in the state of Madhya Pradesh. The second batch of improved cookstoves, manufactured by FabEarth Manufacturing in Sangli, Maharashtra, consisted of 2,322 units, which were distributed starting on 06-February-2024, in the state of Maharashtra. During the current monitoring period, a total of 2,322 new improved cookstoves have been added in Maharashtra. The total number of cookstove which are distributed under the project activity is 11,522. The emission reductions achieved under the monitoring period is 66,258 tCO_2e. The monitoring period duration is from 01-January-2023 to 31-May-2024 (including both the dates).

Table 1 Distribution of Improved cookstoves

Instance No.	Investors/ Associates/ Partners	ICS Planned to distribute	Batch	Distributed	Start Date	ICS Manufacturer	Efficiency	District	State
Instance-1	**Outreach Projects Pvt. Ltd.**	100,000	Batch- 1	9,200	20- Nov 2021	Swami Samarth Electronics Pvt. Ltd.	36.42%	Harda, Betul, Dhar, Niwari, Chhatarpur, Sajapur	Madhya Pradesh
			Batch - 2	2,322	06 – Feb - 2024	FabEarth Manufacturing	36.42%	Jalna	Maharashtra

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Joint Validation and Verification	20-November 2021—19- November 2028 (crediting period) 20-November 2021—31- Decemeber-2022 (first verification period)	VCS Program	LGAI Technological Center, S.A. (Applus+)	7 years (validation) 1 year 1 months (first verification)
Verification	1-January 2023 – 31-May-2024	VCS Program	VKU Certifications Pvt. Ltd., Indore, India.	1 year 5 months
Total	20-November 2021 – 31- May 2024	VCS Program	-	Validation (7 years) 2557 days Verification (2 years 6 months) 924 days

1.3 Sectoral Scope and Project Type

Sectoral scope[1]	03 Energy Demand
Project activity type	Type II Energy Efficiency Improved cookstoves project

1.4 Project Proponent

Organization name	Outreach Projects Pvt. Ltd.
Contact person	Mr. Deepak Jain

[1] *Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes*

Title	Director
Address	Plot Number 128 FB, ring Road, Sector F, Scheme Number 94, Indore - 452016 (Madhya Pradesh), India
Telephone	+91-731-4050174
Email	deepak@infisolutions.org

1.5 Other Entities Involved in the Project

Organization name	Infinite Environmental Solutions Limited.
Role in the project	Project developer (Carbon consultant)
Contact person	Mr. Jimmy Sah
Title	COO
Address	Plot Number 128 FB, ring Road, Sector F, Scheme Number 94, Indore - 452016 (Madhya Pradesh), India
Telephone	+91-731-4050174
Email	jimmy@infisolutions.org

1.6 Project Start Date

Project start date	20-November-2021
Justification	Since the Batch-1 of Project Instance-1 of ICS was commissioned and distributed on 20-Nov-2021. Thus, the start date for the Grouped project is 20-Nov-2021.

1.7 Project Crediting Period

Crediting period	☒ *Seven years, twice renewable* ☐ *Ten years, fixed* ☐ *Other (state the selected crediting period and justify how it conforms with the VCS Program requirements)*

Start and end date of first or fixed crediting period	20-November-2021 to 19-November-2028

1.8 Project Location

Project activity is implemented in multiple states of India and distributed in different phases. Thus, the geographical area of project activity is considered as India. The cookstove distribution is started in phases and the first batch is distributed in the state of Madhya Pradesh, and second batch is distributed in Maharashtra.

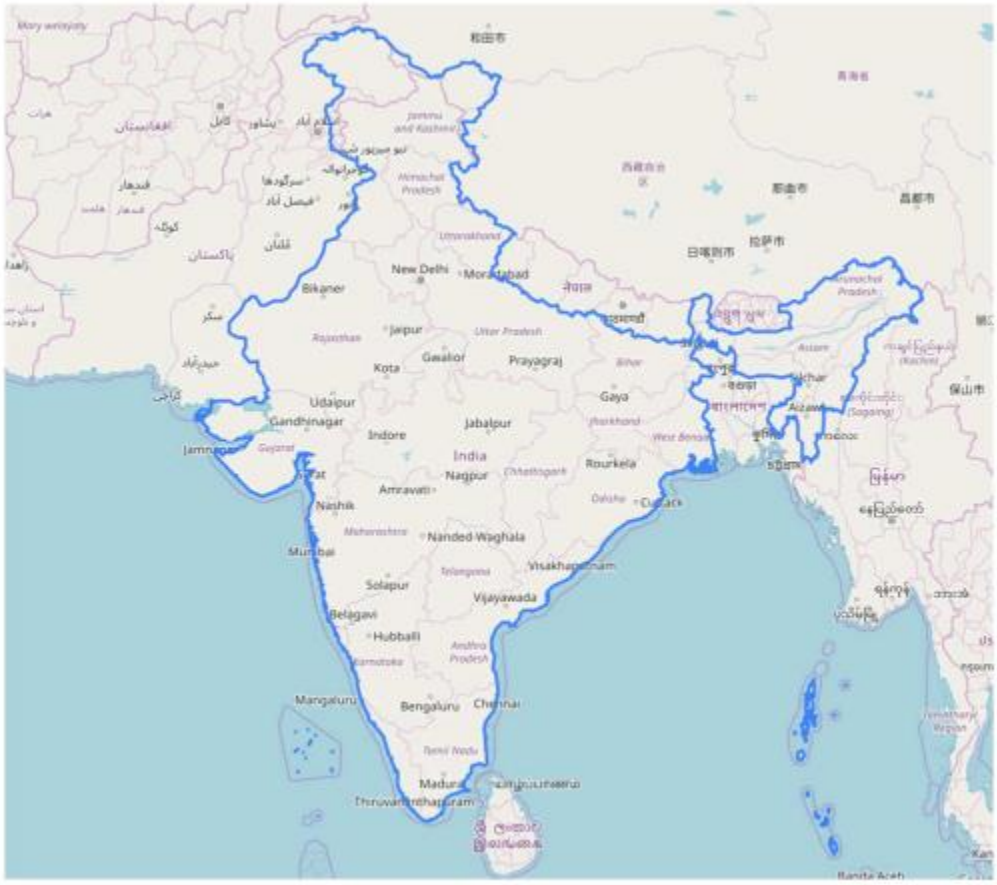

Figure 2 Project Location

In the batch 1 of first instance, 9,200 cookstove were distributed in Madhya Pradesh.

Instance	Batch	Number	Distributing region
Instance-1	Batch 1	9,200	Madhya Pradesh
	Batch 2	2,322	Maharashtra

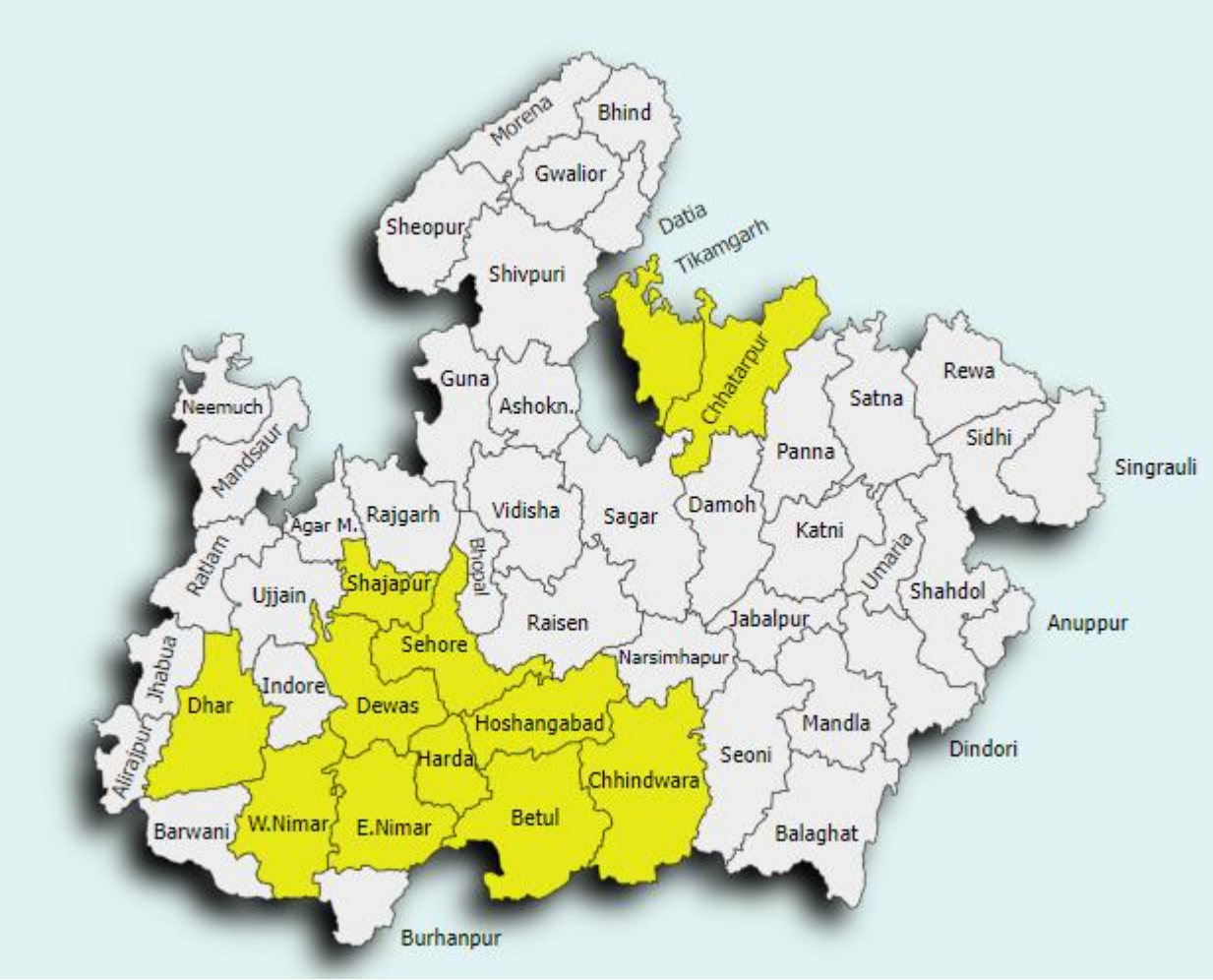

Figure 1 Districts of Madhya Pradesh

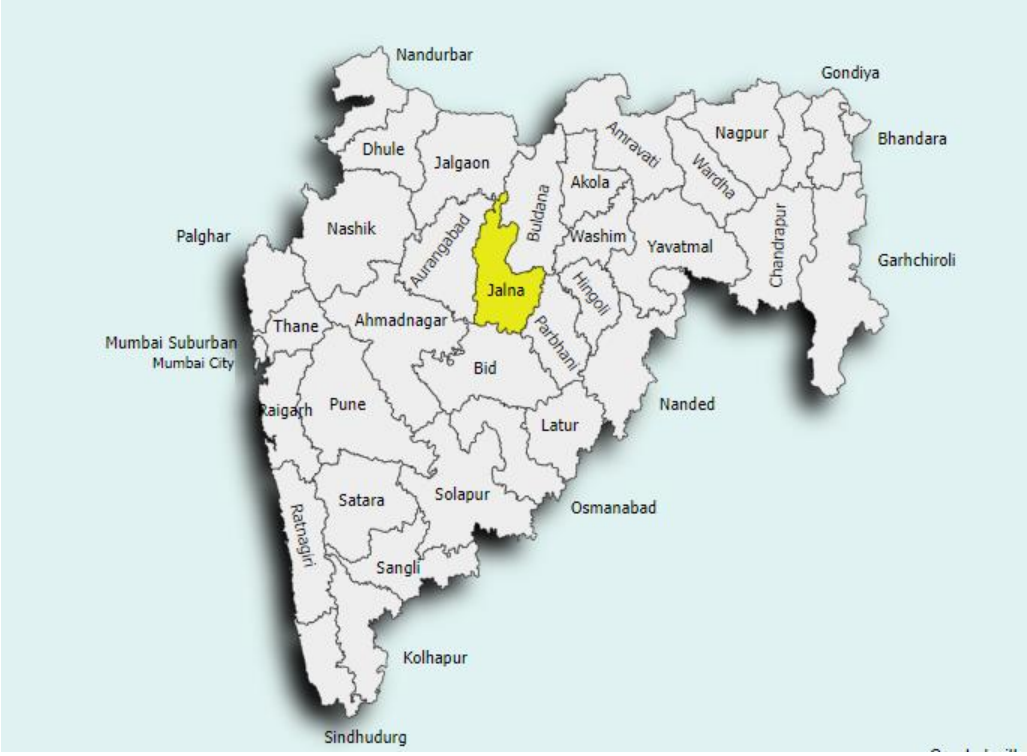

Figure 2 District of Maharashtra

Project Co-ordinates-

The geo coordinated for the districts where the cookstoves are distributed are as follows:

District	latitude	Longitude
Dewas	22°57'57.1" N	76°3.316' E
Harda	22° 20' 14.64" N	77° 5' 60" E
Betul	21° 54' 29.196" N	77° 53' 17.088" E
Hoshangabad (Narmadapuram)	22° 45' 0" N	77° 43' 00" E
Khandwa	21° 49' 32.64"N	76° 21' 9.26"E
Khargone	21°49'22.51" N	75°36'50.18" E
Sehore	23° 11' 54.3732" N	77° 5' 42.6624" E.
Shajapur	23° 25' 28.56" N	76° 16' 32.52" E
Dhar	22° 35' 51.72" N	75° 18' 13.32" E
Niwari and Tikamgarh	24° 44' 37.68" N	78° 49' 56.64" E

Chhindwara	22°04'12.00" N	78°55'48.00" E
Chhatarpur	24°55'3.72" N	79°35'19.36" E
Jalna	19°50'27.67" N	75°53'10.90" E

1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	VMR0006	Methodology for Installation of High-Efficiency Firewood Cookstoves.[2]	Version 1.1
Tool	CDM Tool 30	Calculation of the fraction of non-renewable biomass[3]	04.0
Guideline	Sampling Guideline	Sampling and surveys for CDM project activities and programmes of activities[4]	04.0
Standard	Sampling Standard	Sampling and Surveys for CDM Project activities and programmes of activities[5]	09.0

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

1.10.2 Registration in Other GHG Programs

Was the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

[2] Methodology VMR006 version 1.1 https://verra.org/wp-content/uploads/imported/methodologies/VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstoves-v1.1.pdf

[3] Tool 30: Calculation of fraction of non-renewable biomass https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-30-v4.0.pdf

[4] Guideline for sampling surveys: https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20151023152925068/Meth_GC48_%28ver04.0%29.pdf

[5] Standard for sampling surveys: https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210531160756223/Meth_Stan05.pdf

1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

If yes:

Is the project proponent(s) or authorized representative a buyer or seller of the product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

If yes:

Has the project proponent(s) or authorized representative posted a public statement on their website saying, "Carbon credits may be issued through the Verified Carbon Standard project [project ID] for the greenhouse gas emission reductions or removals associated with [project proponent or authorized representative organization name(s)] [name of product(s) whose emissions footprint is changed by the project activities]."

☐ Yes ☒ No

1.12 Sustainable Development Contributions

Project's contribution to Sustainable Development Goals-

The contributions of implemented project activity towards sustainable development are explained with indicators viz. social, economic, environmental, technological well-being, legislative and temporal as follows:

Environmental well-being

Improved cooking conditions, resulting from reduced smoke and carbon buildup in the kitchen, can lead to an increase in the percentage of the population relying on clean fuel and technology as their primary source (as per SDG 7.1.2).

Social well being

Less usage of fuelwood results in lower physical burden for women, who often have to travel long distances and spend extended hours collecting it. Additionally, it minimizes conflicts between wildlife and humans. As a result, there is a decrease in the proportion of unpaid domestic and care work, as stated in SDG 5.5.2

The amount of indoor pollutants from burning of fuelwood in the kitchen is reduced. Less carbon-di-oxide, carbon mono oxide, black carbon is emitted due to the decrease in total fuelwood consumption. (SDG 13)

Economic well being

The reduction of smoke in the kitchen improves the health of women and children, leading to a decrease in health risks from indoor air pollution. As a result, it contributes to the reduction of mortality rates attributed to household and ambient air pollution, in alignment with SDG 3.9.

Technological well being

The proposed project activity promote improved cookstoves that result in reduced fuel consumption and emissions due to cooking and heating water in homes. (SDG 7.1.2)

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	3.9	3.9.1 Mortality rate attributed to household and ambient air pollution.	Implemented activities to decrease household air pollution	Usage of improved cookstove has decreased the household air pollution 100% Beneficiaries claiming reduction in the indoor smoke. For the current project activity, the SDG impact is evaluated by: Beneficiaries claiming reduction in the household air pollution. (%)	100% beneficiaries claiming the decrease in the household air pollution by the use of improved cookstove.
2)	5.5	5.5.2. Proportion of women in marginal position	Implemented activities to increase women participation	Under the current monitoring period 100% women beneficiaries (monitored) claimed reduction in wood fetching time and time for cooking on improved cookstove. For current Monitoring period: the SDG impact is determined by	100% women claiming the reduction in the wood collection time and time for cooking on the improved cookstove.

				the household claiming decrease in the wood collection time and cooking time by the use of improved cookstove.	
3)	7.1	7.1.2 Proportion of population with primary reliance on clean fuels and technology	Implemented activities to increase use of clean technology	Under the current monitoring period the 9200 cookstoves from the batch 1 and 2322 cookstove distributed in batch 2 of the instance 1	For Monitoring period II total of 11,522 improved cookstove has been distributed.
4)	8.3	8.3.1 Proportion of informal employment in total employment, by sector and sex	Implemented activities to increase employment	trainings for the field staff for the monitoring and data collection has been taken place for the current monitoring period 20 people got employed in this current period.	Trainings for the field staff. Total number of people trained during first monitoring period is 50. For the current monitoring 20 people were employed Total people received training or employed by the project activity is 70.
5)	12.2	12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	Implemented activities to decrease fuelwood consumption	3.68 tonne for batch 1 and 0.70 tonnes for batch 2 of firewood which was directly fetched from the forest is saved in current monitoring period in each household in this instance of the grouped project For current monitoring period the impact of the SDG is measured in Tonne of fuelwood saved in	3.68 tonne for batch 1 and 0.70 tonnes for batch 2 of firewood which was directly fetched from the forest is saved in current monitoring period in each household in this instance of the grouped project

		Tonnes of fuelwood savings for energy purpose.		consumption for energy purposes per household	
6)	13.0	Tonne of greenhouse gas emissions avoided or removed	Implemented activities to decrease the green-house gas emissions	In this monitoring period, 66,258 tonne of CO2e is reduced by the usage of improved cookstoves	MP 1: 47,426 tonne of CO2e is reduced by the usage of improved cookstoves Monitoring period 2: 66,258 tonne of CO2e is reduced during the current monitoring period of project. Total reductions: 112,684 tCO_2e
7)	15.2	15.2.1 Progress towards sustainable forest management	Implemented activities to decrease the fuelwood consumption	3.68 tonne per year in each household where the cookstove are distributed in the Batch 1. For batch 2, 0.70 tonnes of fuelwood per household is saved during the monitoring period	3.68 tonne for batch 1 and 0.70 tonnes for batch 2 of firewood which was directly fetched from the forest is saved in current monitoring period in each household in this instance of the grouped project

1.13 Commercially Sensitive Information

Commercially sensitive information is made available to VVB (Validation/Verification Body) on request. Commercially sensitive information includes financial information such as price of cookstove, maintenance cost of cookstove and consultancy charge, etc.

2. SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Stakeholder Identification	The identification of the total stakeholders and beneficiaries was accomplished by connecting with local communities, non-governmental organizations that closely work within the project boundary and have a strong presence withing the local communities.
Legal or customary tenure/access rights	There are no legal or customary tenure/access rights to territories and resources, including collective and conflicting rights, held by stakeholders, Indigenous People (IPs), local communities (LCs), and customary rights holders in the project areas.
Stakeholder diversity and changes over time	Stakeholders identified for this grouped project activity are diverse in nature – in terms of socio-economic status, age and gender wise and the diversity remains to be same to same for the current monitoring period.
Expected changes in well-being	Expected changes 1. Economic well-being – the project activity provides the clean cookstove for the usage to the rural families thus economic well beings are expected. 2. Environmental well-being – as this project activity reduces the dependence on forest fuelwood and conserves natural resources which are on the verge of depletion. Due to its reduced emission the Project

	activity also helps in avoiding significant amount of GHG emissions.
Location of stakeholders	Stakeholders are located in the various districts of Madhya Pradesh and Maharashtra. The location of the improved cookstove distribution is described under the section 1.8 of the document. Kindly refer to the section 1.8 for the location of the project activity.
Location of resources	Not applicable

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	Stakeholder's consultation is a continuous process and hence a grievance register is kept at the local offices where any stakeholder can come and share his/her feedback, and number of field staff is also shared to the beneficiaries for connecting in case of any grievance. The feedback irrespective of the type is taken care by PP with utmost priority. **the ongoing monitoring mechanism includes regular spot checks by the field team to ensure proper device usage along with frequent visits by field representatives and the technical team to assess the cookstove usage rate.**
Date(s) of stakeholder consultation	For instance, 1: batch 1: the LSC was held on 07 October 2021 at Community Hall, Alamgarh Village, Chicholi, Betul, Madhya Pradesh For Instance, 1: Batch 2: the LSC was held on 06 February 2024 in Kurunji Village, Bhor, District Pune, Maharashtra.
Communication of monitored results	The meeting was outlined towards making aware local stakeholders including local community, local administration representatives, etc., about the project activity that involves distribution of improved cookstove in the rural communities that reduced emissions of GHGs in compared to pre-project or baseline scenario where there was use of traditional biomass cookstoves for the cooking purposes.

	The feedbacks/comments received from stakeholders were quite positive and no negative comments were received. The questions asked by stakeholders were only on process, use of cookstove and maintenance required for the cookstove and these were explained by PP representatives.
Consultation records	Grievance register, Feedback form and attendance register
Stakeholder input	Stakeholder's consultation is a continuous process and hence a feedback register is kept at the project site office where any stakeholder can come and share his/her feedback. The feedback irrespective of the type is taken care by PP with outmost priority.

2.1.3 Free, Prior, and Informed Consent

Consent	No property rights are impacted by the grouped project activity because the ownership of the improved cookstove are with the beneficiaries and only the carbon rights is claimed by the PP.
Outcome of FPIC	No outcome

2.1.4 Grievance Redress Procedure

The grievance register is kept with the local partner offices and there were no grievance which was registered during the current monitoring period for the project cookstove.

Grievances received	Resolution and outcome
There is no grievance raised during the monitoring report.	Grievance Feedback register is kept at the project local office where any stakeholder can come and register his/her feedback If any grievance is received, then the field staff is responsible to address the grievance within 15 days of record. If there is a major grievance which is recorded then the technical team is responsible to handle the grievance and report to the management.

Grievance redress procedure	Stakeholder feedbacks are monitored daily and any grievance if found is resolved within 15 days If any grievance is received, then the field staff is responsible to address the grievance within 15 days of record. If there is a major grievance which is recorded then the technical team is responsible to handle the grievance and report to the management.

2.1.5 Public Comments

There were no public comments received for the project during the current monitoring period.

Summary of comments received	Actions taken
There were no comments received during the monitoring period.	No comments received
comments received outside the public comment period	No comments were received
Comments received during the public comment period	No comment was received

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

Project team members and their roles as per the project structure

Project division	Team member(s)	Responsibility and trainings provided.
Project Management	Program Coordinator	1. Supervises the overall implementation of the project, while ensuring that the necessary compliances are being met. 2. Works with internal and external stakeholders involved in the project.

	General Manager (GM)	1. Oversees the distribution plans of the Project Managers (PMs) in the entire project boundary. 2. Ensures that local implementer and Village Volunteers are efficiently trained to deliver on the requirements of the project. 3. Supervises all the operational and carbon compliance activities for the project.
Ground Operations	Project Manager (PM)	1. Supervises distribution and monitoring campaigns across multiple districts under the project boundary. 2. Prepares a distribution plan with the local implementer and demarcates the distribution area for each village volunteers.
	Local Implementer	1. Manages the local implementer for supervised execution of the project implementation process 2. Communicates and coordinates between the PMs and village volunteers 3. Involved in awareness generation and monitoring activities along with the village volunteers 4. Verify and pass on (to the Data team) the end-user information, carbon rights transfer declarations and other documents collected by the Village volunteers
	Village Volunteers	1. Primary link to the rural household beneficiaries 2. Distribute and monitor the improved cookstoves, collect the end-user information and train the users to use the stoves efficiently 3. Address the customer grievances as and when they arise
Data Management	Data team Manager & Data verification officers	1. Oversees proper functioning of the data systems and database

		2. Ensures that the user data record is updated and verified.
Carbon Compliance	Project Consultant & Carbon Associates	1. Ensure that the project complies to the methodological requirements of the carbon registry under which the project is listed.

2.2.2 Risk assessment

	Risk identified	Mitigation or preventative measure(s) taken
Natural and human-induced risks to stakeholders' wellbeing	No risk identified	The project involve distribution of cookstoves which helps improving the health of stakeholders.
Risks to stakeholder participation	No risk identified	There in not any type of risk to stakeholder participation in the cookstove distribution project. The project aims to reduce the drudgery caused by the use of traditional mud cookstove.
Working conditions	No risk identified	The working conditions is favorable to the workers. The field staffs are also trained for ensuring the maximum safety working on the improved cookstoves. The improved cookstove provided has an outer-grills for the safety purpose of the beneficiary from fire and heat.
Safety of women and girls	No risk identified	Women and girls have to spend less time in collection of fuelwood. Therefore the project creates a positive impact op the lives of women.
Safety of minority and marginalized groups, including children	No risk identified	No discrimination to the minority groups or marginalized community has been done during project implementation. Moreover, children can utilize their saved time in getting education instead of collecting wood.
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	No risk identified	The improved cookstove reduces the amount of fuelwood, which reduces the air pollution.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

	Risks identified[6]	Mitigation or preventative measure(s) taken
Discrimination	No risk identified	There has been no discrimination in any form involved in the grouped project.
Sexual harassment	No risk identified	The grouped project activity has No Discrimination Policy and following it strictly so no discrimination or sexual harassment has occurred.
Gender equity in labor and work	No risk identified	Trainings and employment have been given to both men and women equally. PP has provided the equal opportunities in the context of gender equity and pay for labor and work
Forced labor	No risk identified	No forced labor is involved in the project activity.
Child labor	No risk identified	No one is forced to work as labor.
Human trafficking	No risk identified	No worker as a victim of human trafficking is involved in the project. Nor the project is supporting the human trafficking incidents.

2.3.2 Human Rights

The grouped project activity is following anti-discrimination practices and follow the Human rights moral principles and PP prepared Anti-discrimination Policy before implementation of the project activity. All the stakeholders are identified without discrimination based on gender, race, caste, national origin, religion, age, disability, marital status, sexual orientation, cooperative membership, or political affiliation.

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	No human rights have been identified which are violated during the monitoring period of the project.

[6] The identified risks and commensurate mitigation or preventative measure(s) for forced labor, child labor, and human trafficking, must be inclusive of staff and contracted workers employed by third parties.

	As the project is intended to improve the lives of rural households in the project areas. A local team member is appointed for all the communications at the field and providing the feedback on same.

2.3.3 Indigenous Peoples and Cultural Heritage

Risks identified	Mitigation(s) or preventative measure taken
No risk identified	No rights have been identified which are violated during the monitoring period of the project.

2.3.4 Property Rights

Risks identified	Mitigation or preventative measure(s) taken
No risk identified	Not any kind of property rights have been identified which are violated during the monitoring period of the project.

2.3.5 Benefit Sharing

Since all the cost incurred in the manufacturing, distribution and maintenance is taken care by the CME or Project Proponent, therefore the benefits of the carbon revenues are not been shared with the beneficiaries. A small amount for the cookstove handling was collected from the beneficiaries which was used in the management of the ground staff. Project Proponent has not generated any revenue from the initial cost of distribution.

Instead of any revenue shared with the beneficiary, the maintenance of cookstoves is taken up the PP, at free of cost.

Summary of the benefit sharing plan	Outreach Projects Private Limited is legal owner of the grouped project activity and there is no benefit sharing hence the section is. Hence not applicable. The rights of carbon credits are with Outreach Projects Private Limited. The same was discussed during the local stakeholder consultation meeting too.
Benefit sharing during the monitoring period	Not Applicable

2.4 Ecosystem Health

The project does not have any negative impact on bio diversity and ecosystem. The project is intendent to reduce the consumption of firewood for cooking purposes in the household. The project is reducing the rate of deforestation in the project area.

	Risk identified	Mitigation or preventative measure(s) taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	No risk identified as this is not a AFOLU project. And the project activity decreases the rate of deforestation by the use of improved cookstove.
Soil degradation and soil erosion	No risk identified	No risk identified as this is not a AFOLU project.
Water consumption and stress	No risk identified	No risk identified as this is not a AFOLU project.

2.4.1 Rare, Threatened, and Endangered species

The project activity is not a AFOLU project, hence this section is not required.

Species or habitat	This project is distribution of improved cookstove project. Therefore, not applicable.
Areas needed for habitat connectivity	This project is distribution of improved cookstove project. Therefore, not applicable.

Risk related to habitats for rare, threatened, and endangered species, and for areas for habitat connectivity.

	Risks identified	Mitigation or preventative measure(s) taken
Habitats for rare, threatened, and endangered species	No Risk Identified	This project is distribution of improved cookstove project. Therefore, not applicable.
Areas for habitat connectivity	No Risk identified	This project is distribution of improved cookstove project. Therefore, not applicable.

2.4.2 Introduction of species

this project is a distribution of improved cookstove project. Therefore, this section is not applicable.

Species introduced	Classification	Justification for use	Adverse effects and mitigation
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

2.4.3 Ecosystem conversion

The project is distribution of improved cookstove in the rural communities. And hence it is not a AFOLU project therefore the section is not applicable for the current project activity.

	Risks identified	Mitigation or preventative measure(s) taken
Ecosystem conversion	No risk identified	Project is not a AFOLU Project

3.IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The grouped project activity is promoted by individual sub project investors/associates/partners, details of subsequent instances and batches would be added to the following table as and when implemented:

Table 2 Details of different instances and batches of cookstove distributed

Instance No.	Investors/ Associates/ Partners	ICS Planned to distribute	Batch	Distributed	Start Date	ICS Manufacturer	Efficiency	District	State
Instance-1	**Outreach Projects Pvt. Ltd. (OPPL)**	100,000	Batch-1	9,200	20-Nov-2021	Swami Samarth Electronics Pvt. Ltd.	36.42%	Harda, Betul Chhindwara Dhar Chhatarpur Niwari Shajapur	Madhya Pradesh
			Batch-2	2322	06 – Feb - 2024	FabEarth Manufacturing	36.42%	Jalna	Maharashtra

Table 3 Distribution details of current instance is mentioned below

S. No	District	State
1.	Harda	Madhya Pradesh
2.	Dewas	
3.	Betul	
4.	Hoshangabad (Narmadapuram)	
5.	Khandwa	
6.	Khargone	
7.	Sehore	
8.	Shajapur	
9.	Dhar	
10.	Tikamgarh and Niwari	
11.	Chhindwara	
12.	Chhatrpur	

13.	Jalna	Maharashtra

3.2 Deviations

3.2.1 Methodology Deviations

The project activity has not taken any deviation in the applied approved methodology VMR0006 Ver. 1.1.

3.2.2 Project Description Deviations

The project activity has not taken any deviation in the applied approved Project Description.

3.3 Grouped Projects

For Grouped Project and Project Activity Instances

The VCS Standard v 4.4, section 2.1.1 specifies the scope included in the VCS Program:

Table 4 Project Eligibility for Grouped Project

SCOPE	GROUPED PROJECT SCOPE
1) The seven Kyoto Protocol greenhouse gases.	The Grouped project includes reduction of Carbon Dioxide emissions which is one of the seven, Kyoto Protocol greenhouse gases included under the scope of VCS program
2) Ozone-depleting substances. (ODS)	The Grouped project does not involve use of Ozone Depleting Substances
3) Project activities supported by a methodology approved under the VCS Program through the methodology approval process.	The Grouped Project uses VMR0006: Methodology for Installation of High-Efficiency Firewood Cookstoves which is supported by a methodology approved under an approved GHG Program by VCS
4) Project activities supported by a methodology approved under an approved GHG program, unless explicitly excluded (see the Verra website for exclusions).	The Grouped Project does not use other methodology approved under an approved GHG program.
5) Jurisdictional REDD+ programs and nested REDD+ projects as set out in the VCS Program document Jurisdictional and Nested REDD+ (JNR) Requirements.	The Grouped project does not involve in Jurisdictional REDD+ programs and nested REDD+ projects as set out in the VCS Program

The Grouped Project Activities does not fall under the category of excluded projects in Table 1 of the VCS Standard v4.4 and is therefore eligible under the scope of the VCS Program:

Table 5 Excluded Project Activities as per VSC Standard v4.4

Excluded Large Scale Activity in Non LDC	Applicability
Activities that reduce hydrofluorocarbon-23 (HFC-23) emissions	N/A: The Grouped Project reduces GHG emissions due to energy efficiency measures by introducing improved cookstoves
Grid-connected electricity generation using hydro-power plants/units	N/A: The Grouped Project does not involve generation of electricity using hydro-power plants/units
Grid-connected electricity generation using wind, geothermal, or solar power plants/units	N/A: The Grouped Project does not involve generation of electricity using wind, geothermal, or solar power plants/units
Utilization of recovered waste heat for, inter alia combined cycle electricity generation and the provision of heat for residential commercial or industrial use	N/A: The Grouped Project does not involve generation of heat for producing electricity.
Generation of electricity and/or thermal energy using biomass. This does not include efficiency improvements in thermal applications (e.g, cookstoves)	N/A: The Grouped Project does not involve generation of electricity and/or thermal energy using biomass
Generation of electricity and/or thermal energy using fossil fuels, including activities that involve switching from a higher carbon content fuel to a lower carbon content fuel	N/A: The Grouped Project does not involve generation of electricity and/or thermal energy using fossil fuels.
Replacement of electric lighting with more energy efficient electric lighting, such as the replacement of incandescent electrical bulbs with CFLs or LEDs	N/A: The Grouped Project do not include the replacement of electric lighting with more energy efficient lighting
Installation and/or replacement of electricity transmission lines and/or energy efficient transformers	N/A: The Grouped Project do not include the installation and/or replacement of electricity transmission lines and/or energy efficient transformers.

From the above it can be concluded that the **Grouped Project and Project Activity Instances** is eligible under the scope of the VCS Program.

For inclusion of new project instances, the project proponent shall ensure that it meets the eligibility criteria below:

S. no.	Eligibility Criteria	Project Activity instances eligibility
1	Applicability Conditions: The project activity instances shall meet applicability conditions for applicable methodology as defined in section **Error! Reference source not found.** of approved PDMR.	Details of applicability conditions for initial project activity instances – Instance 1: initial project activity instances meet respective applicability conditions of methodology VMR0006 ver 1.1, In all other instances the eligibility criteria would be fulfilled. Hence this eligibility criterion is fulfilled.
2	Geographical Area: Occur within one of the designated geographic areas specified in the project description The project activity instances to be included in the grouped project activity will be located within India	The initial project activity instances – Instance – 1: is being included in the grouped project are located within geographic boundaries of India. In all other instances the eligibility criteria would be fulfilled. Hence this condition is fulfilled.
3	Start Date: The start date of each project activity instance under the grouped project should not be prior to the start date of the grouped project i.e. 20-Nov-2021. The start date of each project activity instance will be determined through documentary evidence.	The start date of initial project activity instances - Instance – 1: Start Date 20-Nov-2021, The start date of project instance is in line with the Grouped Project. In all other instances the eligibility criteria would be fulfilled. Hence this condition is fulfilled.
4	Technology type: Use the technologies or measures specified in the project description. The project activity instances to be included in the grouped project activity will be energy efficiency measures by introducing improved cookstoves with at least 25% efficiency as per water boiling test or third-party certification	The initial project activity instances – Instance – 1: ICS efficiency @ 36.42%, In all other instances the distributed cookstoves would have efficiency more than 25%, hence eligibility criteria would be fulfilled. Hence this condition is fulfilled.
5	Baseline scenario: Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area. All Project Activity Instances shall meet the baseline definition as defined in respective valid methodology for geographic area and as explained in section 3.4	The initial project activity instances – Instance – 1: Have same baseline as per methodology as detailed in subsequent sections, In all other instances the eligibility criteria would be fulfilled. Hence this eligibility criterion is fulfilled.

6	Additionality: Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area. The project activity instances to be added as part of the grouped project will meet additionality criteria as set out in respective methodologies (VMR0006) for geographic area and as explained in section 3.5	The initial project activity instances – Instance – 1:, under which Batch 1 of 9,200 and Batch 2 of 2,322 cookstoves are distributed. And the distribution meets the need of additionality as explained in section **Error! Reference source not found.** of approved PDMR Hence the condition is fulfilled.
7	Local Stakeholder Consultation: The Entity responsible for Individual Instances of the Grouped Project shall engage with local stakeholders during the project development and/or implementation processes.	Local stakeholder consultation has been conducted for initial project activity instances – Instance–1: Details of LSC is mentioned in section 1 of this document. Details are mentioned in subsequent section of this document. Hence this condition is fulfilled.
8	Apply the technologies or measures in the same manner as specified in the project description.	Only the energy efficient improved cookstoves would be distributed in any instance of the grouped project.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

4. DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	f_{NRB}
Data unit	%
Description	Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass
Source of data	Determined by using Tool 30: Calculation of the fraction of non-renewable biomass. Version:04
Value applied	India : 91.19%
Justification of choice of data or description of measurement methods and procedures applied	The value has been calculated using the tool 30 version 04.0.
Purpose of data	Calculation of Emission Reductions
Comments	Parameter fNRB once fixed shall remain fixed for the entire crediting period, detailed calculation for each state fNRB is provided in separate spreadsheet

Data / Parameter	η_p
Data unit	Fraction
Description	The efficiency of the project stove at the start of project activity
Source of data	Manufacturer's Specification
Value applied	0.3642
Justification of choice of data or description of measurement methods and procedures applied	This parameter shall be determined ex-ante.
Purpose of data	Calculation of η_{new}
Comments	Changed accordingly to the model of cookstove

Data / Parameter	B_{old}
Data unit	tonne/year
Description	Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices
Source of data	calculated according to options stated in 'Determination of quantity of firewood consumed in absence of project activity as per options provided in Section 8.4 of the applied methodology VMR0006 version 1.1. Baseline survey is conducted to see the actual usage of fuelwood in baseline conditions
Value applied	3.81
Justification of choice of data or description of measurement methods and procedures applied	This parameter shall be determined ex-ante
Purpose of data	Calculation of Emission Reductions
Comments	This parameter shall be determined ex-ante

4.2 Data and Parameters Monitored

Data / Parameter	$N_{y,i,k}$
Data unit	Number
Description	Number of project devices of type i and batch j operating during year k
Source of data	Monitoring
Description of measurement methods and procedures to be applied	Measured directly or based on a representative sample. Sampling the standard shall be used for determining the sample size to achieve 90/10 confidence precision according to the latest the version of Standard for sampling and surveys for CDM project activities and programme of activities.
Frequency of monitoring/recording	At least once every two years
Value monitored	11,522 Batch 1: 9,200 Improved cookstoves Batch 2: 2,322 improved cookstoves

Monitoring equipment	Monitoring survey conducted between 01- June- 2024 to 28-June-2024 for both the batches
QA/QC procedures to be applied	The project proponent shall maintain a distribution record to calculate this parameter
Purpose of the data	Calculation of Emission reductions
Calculation method	Sample Survey
Comments	The proportion of operational stoves obtained from the survey is multiplied by the total commissioned stoves to arrive at this value.

Data / Parameter	$\eta_{new,i,j}$
Data unit	Fraction
Description	The efficiency of the device of each type i and batch j implemented as part of the project activity
Source of data	Calculated using the Equation no. 05 in methodology VMR0006 ver 1.1
Description of measurement methods and procedures to be applied	To adopt Option V given in the methodology: "Efficiency of the improved cookstoves to be estimated using equation 5 of applied approved methodology where the loss in efficiency per year is calculated, and therefore this parameter does not need to be monitored"
Frequency of monitoring/recording	Annually
Value monitored	For batch 1: 0.3389 For batch 2: 0.3423
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of the data	Calculation of emission reductions
Calculation method	As per equation 5 of VMR0006 i.e. $\eta_{new,i,y} = \eta_p \times (DF_n)^{y-1} \times 0.94$

	<table><tr><th>Year</th><th>$\eta_{new,i,y}$</th></tr><tr><td>1</td><td>0.3423</td></tr><tr><td>2</td><td>0.3389</td></tr><tr><td>3</td><td>0.3355</td></tr><tr><td>4</td><td>0.3322</td></tr><tr><td>5</td><td>0.3289</td></tr><tr><td>6</td><td>0.3256</td></tr><tr><td>7</td><td>0.3223</td></tr></table>
Comments	Calculated using the Equation no. 05 in methodology VMR0006 ver 1.1

Data / Parameter	$B_{y=1,new,i,j,survey}$
Data unit	Tonne
Description	Annual quantity of woody biomass used by improved Cookstoves in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey.
Source of data	calculated during the first monitoring survey. Registered PDMR
Description of measurement methods and procedures to be applied	The minimum sample size of each type i and batch j should be in line with the latest version of Standard for sampling and surveys for CDM project activities and programme of activities or guidelines provided in methodology Section 8.4 option (b). Determined in the first year of the introduction of the devices (e.g. during the first year of the crediting period, y=1) through measurement campaigns at representative households and/or sample survey. Sample surveys to estimate this parameter, which is solely based on questionnaires or interviews (i.e. that do not implement measurement campaigns) may only be used if the following conditions are satisfied. (i) Baseline cookstoves have been completely decommissioned and only improved cookstoves are exclusively used in the project households; If multiple devices are used in the project, it is possible from the results of the survey questions to differentiate the quantity of firewood being used by each device. In other words, if more than one device, or another device that consumes

	firewood, are in use in project households, then the sample survey needs to distinguish the quantity of firewood used by the project device and the other devices that use firewood.
Frequency of monitoring/recording	Determined in the first year of project implementation
Value monitored	1.087 tonne/device/year
Monitoring equipment	Determined in the first year of project implementation
QA/QC procedures to be applied	Not applicable
Purpose of the data	Calculation of Emissions Reductions
Calculation method	Not applicable
Comments	This parameter shall be determined in the monitoring survey

Data / Parameter	Life span
Data unit	Years
Description	The operating lifetime of the project device. The life span should be reported if the methodology equation 5 is adopted to determine the project stove efficiency
Source of data	Manufacturer specification
Description of measurement methods and procedures to be applied	The data source as per manufacturer specification
Frequency of monitoring/recording	Once at the time of installation of the batch of type of stove
Value monitored	7 years
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of the data	Calculation of emission reductions
Calculation method	Not applicable.
Comments	Changes accordingly with different model of cookstove

Data / Parameter	η_{old}
Data unit	Fraction
Description	The efficiency of baseline cookstove
Source of data	default value
Description of measurement methods and procedures to be applied	A default value of 0.1 shall be used if baseline device is a three-stone fire using fuelwood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney
Frequency of monitoring/recording	Fixed for each individual household at the time of project implementation
Value monitored	0.1
Monitoring equipment	Use of default value for the baseline cookstove
QA/QC procedures to be applied	NA
Purpose of the data	Calculation of emission reductions
Calculation method	Use of default value
Comments	This value is fixed ex-ante

4.3 Monitoring Plan

Sample Plan:

The monitoring plan is designed to monitor the parameters listed in Section above, which are required for the calculation of the actual GHG emission reduction achieved by the project activity using ex-post sampling survey. The share of operating stoves and the continued use of pre-project devices is determined based on sampling procedures as outlined below. The Project Proponent is responsible for conducting the sampling surveys and maintaining a database with all operating stoves. No monitoring for leakage through competitive uses of fuelwood is required, as the parameter wood usage is multiplied by 95% to account for leakage as per methodology VMR0006 ver 1.1. As per the Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 04, the sampling plan is the following:

(a) Sampling Design

Due to the large number of ICS envisioned to be distributed as part of the project activity, it is not economically feasible to monitor each individual ICS unit distributed. Therefore, representative sampling is undertaken as part of a project instance-wide Sampling Plan (by grouping and sampling across project activities) that is designed in line with the requirements of the Guideline "Sampling and surveys for CDM project activities and programme of activities", version 04.

(i) Objective and Reliability Requirements:

The objective is to obtain an unbiased and reliable estimate of the proportion or mean value of the following key variables over the course of the crediting period. As per CDM Methodology AMS II. G version 13.0, 90/10 confidence/precision shall be applied for the annual sampling requirement and 95/10 for biennial sampling inspection. As per Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities version 09, 90/10 confidence/precision to be adopted for the small-scale project and 95/10 for the large-scale project. Since, this is a grouped project in which each instance can be categorised as a small and large-scale project. The confidence and precision interval is mentioned with instance in the table given below:

Description for monitoring of instances

Instance	Small/Large Project	Confidence/Precision Interval
Instance1	Small scale project	90/10

Given that the size of the first instance of the grouped project is under the category of large projects, hence 90/10 confidence/precision shall be adopted for all parameters unless the average annual emission reductions of the project are below the threshold.

Monitored Parameter-

Table 11 Parameters Monitored

Parameter	Description	Parameter type/ Frequency
$N_{y,i,j}$	Number of project devices of type i and batch j operating during year y	Proportion/Biennially
$B_{y=1,new,I,survey}$	Quantity of woody biomass used by project devices in tonnes per device of type i and batch j	Mean value
n_{new}	The efficiency of the device of each type i and batch j implemented as the part of project activity	Calculated as per equation 5 of the methodology VMR0006.

n_{old}	The efficiency of baseline stove	Use of default value of 0.10

(ii) Target Populations:

The target population for the proportion of Improved Cookstoves still in operation ($N_{y,l,j}$) of this project are all households in the project database which are using fuelwood in Improved Cookstoves distributed under the project for cooking. The target population for pre-project appliances is the set of old stoves still in use under the project database.

(iii) Sampling Frame

To ensure the continuity of the project instances included for a single sampling plan, two sampling frames shall be defined. Overall, all project instance have the same group of end-users which is from households from rural/semi-urban areas. The projects are to be implemented in rural areas; thus, it is expected that the geographical locations do not have influence on the parameter of interest. Therefore, all above-mentioned parameters can be assumed to be highly homogeneous for each Improved Cookstove model regardless of how the end-user group and distribution/installation location is defined.

1) **The sampling frame for the proportion of Improved Cookstove in operation ($N_{y,l,j}$)**

• The sample frame refers to all the information sources on the Database. There are two primary mechanisms for data collection: The Registration Process for newly distributed/installed Improved Cookstove and the Monitoring Survey (which includes a household questionnaire and visual inspection of traditional as well as improved cookstove) that improved cookstove is used throughout the lifetime. The detailed information collected from the Registration Process is used to populate the stoves Database and the Monitoring Survey follows Guideline for "Sampling and Surveys for CDM Project Activities and Programme of Activities", version 04.

• As explained below (in section "Sampling Method"), to take the different characteristics of different project instances Implemented and Improved cookstoves models into consideration, Project instances are grouped together to create a Primary Sampling Unit, which is homogenous. As per EB 86 Annex 04, Appendix-2, paragraph 1, for the use of a single sampling plan covering a group of projects, provided the homogeneity of the population can be demonstrated, or differences are taken into account in the sample size calculation, a 90/10 confidence/precision is applied for biennial sampling. The first step is to identify the Primary Sampling Units. Primary sampling units are project instances, which have:

1) **The same ICS models**

In a batch of any instance, the model of the cookstove issame and sampling of each type of cookstove would be done. There are two types of cookstoves distributed in two batches with the same Improved cookstove model can therefore be clubbed together and form a Primary Sampling Unit. In case the instances having two different ICS models being implemented – this forms two Primary Sampling Units. This is justified by the fact that the project might vary

in terms of performance, and it is important for the Project Proponent to collect and monitor accurate data for each stove model.

a. **Adjustment to account for any continued use of pre-project devices during the year ($\mu_{y,i,j}$)**

In line with applied approved methodology VMR0006, as installing data logger is not practical and if any use of -pre-project device can be monitored in a common survey with other monitoring parameters; therefore, a random sub-sample within the common survey is taken to determine continued use of old cookstoves and its proportional usage by including suitable questionnaire.

There are two situations 1) project Improved Cookstove are completely discarded 2) the old stoves used along with project ICS.

Hence in the first case, simple multiplication of a fraction of the total number of project is done Improved cookstove displaced by old cookstoves by the total number of cookstoves in the project, to achieve precise results based on survey result sample size calculation can be repeated.

However, for the second case, surveys may be conducted if the use of data loggers to record the continued operation of baseline devices is demonstrated to be not practical, for example when the baseline device is the three-stone fire. The surveys is designed to capture the cooking habits and stove usage of households in the region, including quantification of use of baseline devices, by formulating questions and/or collecting evidence to determine the frequency of usage of both the project devices and baseline devices.

Quantity of woody biomass used by project devices in tonnes per device of type i and batch ($B_{y=1,new,i,j,survey}$)

As mentioned above either separate sampling can be done for this parameter or can be clubbed with a sampling of the above parameters, wherein interview questions are to be included to determine the average fuelwood used by the project device.

(iv) **Sampling Method**

The sampling method for monitored parameters $N_{y,i,j}$ and $\mu_{y,i,j}$ is Simple Random Sampling and samples is randomly selected from the primary sampling units as illustrated above. To ensure a random selection of ICS, random number generators are applied. Each Improved Cookstove in the target population is uniquely identifiable by its unique ID number. Each Improved Cookstove can thus be allocated a Sample Selection Number in each monitoring period, starting from 1 and increasing up to the total number of Improved Cookstove in the Database for that pre-defined sampling frame. Applying the random number generators, the Improved Cookstoves can then be randomly chosen from the defined population up to the required sample size as calculated by the Project Proponent.

To determine the parameters, sampling involves the following approaches (outcome in brackets):

$N_{y,i,j}$: Visual inspection of the premises to see if improved cookstove is operational and in use. Interview with end-user is required to verify that improved cookstove is still in use (Yes/No)

$\mu_{y,i,j}$: Pre-project device only is in use then fraction to be used to calculate the total number, however, if -the pre-project device is used along with project improved cookstove, the proportion of usage of each is determined by cooking habits evaluated by survey questionnaire during the monitoring period.

$B_{y=1,new,i,j,survey}$: Quantity of woody biomass used by improved cookstoves devices in tonnes per device (first year of installation). since this parameter was determined during the first year of distribution therefore it is not covered during the current monitoring survey.

(v) Sample Size

For the estimation of the proportion or mean value of the parameters investigated, the minimum sample size for each sample frame has to achieve the 90/10 confidence/precision for annual sampling.

The procedure to determine the sample of households ensures that they adequately represent the broader project population, minimizing sampling error. Using, 90 per cent confidence level, and a10 per cent margin of error, random samples is selected from each Primary Sampling Unit. There are two parameters that for estimating sampling: the number of stoves still in operation during the monitoring period as determined by the monitoring survey ($N_{y,l,j}$), and the continued use of old stoves, ($U_{y,l,j}$). In line with sampling guidelines, all can be sampled in a single survey with a random sample of households using the above-described confidence/precision levels depending on annual or biennial monitoring frequency. The $N_{y,l,j}$ and $U_{y,l,j}$, requires proportion/percentage parameters, however, the wood consumption by ICS may have variation and is a mean value.

In order to calculate the required sample size estimates, values for the proportions, mean values, and standard deviations are required. As per Guidelines for Sampling and surveys for CDM project activities and programmes of activities, version 04.0 Appendix 1 paragraph 5, there are different ways available to obtain the estimates of the parameter of interest.

(a) Refer to the result of previous studies and use these results.

(b) In a situation where information from previous studies is not available, a preliminary sample as a pilot could be conducted and use that sample is used to provide the estimates.

(c) Use best guesses based on the researcher's own experiences.

For the registration purpose of the project, option C shall be applied. For the first monitoring period, values from a pilot is applied. For the following monitoring periods, the estimates is adjusted to take into account the results of the previous monitoring period(s) or the result from the recent pilot study, which is conducted after the previous monitoring periods.

The following assumptions are made to exemplify the sample size calculation for parameters: $N_{y,i,j}$ and $\mu_{y,i,j}$.. The PP distributed 9,200 cookstoves in Madhya Pradesh and 2322 cookstoves in Maharashtra in this Monitoring Period. Hence, population size, N is taken as 11,522 households.. It is expected at least 50% of ICS is operational, hence the expected proportion p for $N_{y,i,j}$ is taken as 0.5.

Sample size calculation:

The calculation of the required sample size for each parameter in the first monitoring period is illustrated below for a 90/10 level of confidence and precision. In all cases a conservative approach is taken, however, if for any parameter the required 90/10 confidence/precision is not met then the project proponent randomly selects an additional sample and collect further data from this sample to ensure the pooled data meet or exceed the required thresholds.

Data recording –

Data is recorded for a-year post verification for the same monitoring period.

- Including-
- Sampling forms
- Stakeholders feedback forms
- ICS specifications
- Name and telephone number (if available), and address of recipient and Model/type of project technology sold/distributed
- unique identification alpha/numeric ID for each device that is sold/distributed

Monitoring and Maintenance Plan

The improved cookstove distribution grouped project implemented by Outreach Projects includes a plan for regular monitoring and maintenance of the cookstoves. To ensure that the cookstoves are well-maintained and continue to provide benefits to households, a ground level team has been assigned to each household where the cookstoves have been distributed. The team visits households on an annual frequency to check the condition of the cookstove and provide any necessary maintenance or replacement. A designated team leader is responsible for monitoring the team's activities and ensuring that all households are visited as scheduled. A register is maintained for household, documenting the date of each visit, the condition of the cookstove, and any maintenance or replacement actions taken. In the event that a cookstove cannot be repaired or replaced on site, the team coordinate with the project head to arrange for replacement from the site. The project head oversees the team's activities, monitor the condition of the cookstoves, and coordinate with other project staff as needed.
The ground team also provides education and training to households on how to properly use and maintain the cookstoves, and collects feedback from households on their experience with the cookstoves. By following this plan, the project ensures that the improved cookstoves are well-maintained, replaced as needed, and continue to provide benefits to households over the long term.

The policies used for oversight and accountability of monitoring activities for improved cookstove project includes regular site visits by project managers to monitor the progress of the project,

ensure that the installation and usage of the improved cookstoves is on regular basis and the users are properly trained. In addition, data collection on stove usage and fuel consumption would be carried out at regular intervals. Community meetings are also held to discuss the project and receive feedback from the users to ensure that the project is meeting their needs and expectations. Finally, the data collected would be properly analyzed and that any issues that arise are addressed promptly.

Ground level team has been trained for the maintenance of the cookstoves, tracking the use of the cookstoves and data collection for the monitoring and distribution of the cookstoves. there is a regular visits by the field staffs for the determination of project stove usage.
For the internal auditing and quality assurance/quality control procedures, the following steps are taken:

1. An internal audit team in Outreach Projects Pvt. Ltd. is appointed, for conducting periodically meetings to ensure that the monitoring plan is being implemented effectively and efficiently.
2. The audit team reviews the monitoring plan, data collection procedures, data management, and reporting processes.
3. The team identifies any non-conformances and suggest corrective actions to be taken by the implementing partners.
4. The implementing partners takes corrective actions to address the identified non-conformances.
5. The corrective actions taken is documented and reported to the oversight agency for review and approval.

The internal audit and quality control procedures is an ongoing process to ensure that the project is implemented as per the monitoring plan and is meeting its objectives.

For Batch 01

For current distributed 9,200 cookstoves, the sample size calculation is done as follows:

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 \times p(1-p)}$$

Where;

n = Sample size
N = Population size (Total number of households/ICS)
p = Expected proportion
1.645 = Represents the 90% confidence required
0.1 = Represents the 10% relative precision

Putting the values for current monitoring period.

$$n \geq \frac{1.645^2 \times 9{,}200 \times 0.5(1-0.5)}{(9{,}200-1) \times 0.1^2 \times 0.5^2 + 1.645^2 \times 0.5(1-0.5)}$$

n = Sample size (263)
N = Population size (9,200)
p = Expected proportion (0.5)

To be reliable on the sample results and decrease the error, total of 300 random samples from the distributed cookstoves in batch 01 are conducted in the monitoring. The random number are generated using the data analysis tool of the excel and the survey were carried out on those.

For Batch 02

For current distributed 2,322 cookstoves, the sample size calculation is done as follows:

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 \times p(1-p)}$$

Where;

n = Sample size
N = Population size (Total number of households/ICS)
p = Expected proportion
1.645 = Represents the 90% confidence required
0.1 = Represents the 10% relative precision

Putting the values for current monitoring period.

$$n \geq \frac{1.645^2 \times 2{,}322 \times 0.5(1-0.5)}{(2{,}322-1) \times 0.1^2 \times 0.5^2 + 1.645^2 \times 0.5(1-0.5)}$$

n = Sample size (91)
N = Population size (2,322)
p = Expected proportion (0.75)

To be reliable on the sample results and decrease the error, total of 100 random samples from the distributed cookstove in batch 02 are conducted in the monitoring. The random number are generated using the data analysis tool of the excel and the survey were carried out on those.

Therefore, a total of 400 samples were taken in the current monitoring period.

The random number generated are described as below:

Random Sample of 300									
1B0905	1B0140	1G0775	1A0536	1A0428	1I0267	1F0323	1E0213	1I0547	1J0891
1H0806	1B0303	1F0835	1C0214	1A0424	1A0689	1B0578	1J0922	1I0339	1J0825
1I0248	1A0620	1E0268	1C0599	1A0520	1e0190	1C0992	1J0360	1J0770	1C0548
1I0216	1A0656	1E0543	1C0585	1F0531	1F0490	1C0847	1J0641	1B0535	1C0710
1I0731	1B0705	1E0930	1A0504	1A0108	1I0574	1C0801	1A0234	1E0770	1G0923
1I0664	1E0481	1E0795	1C0051	1I0654	1G0475	1I0310	1A0586	1H0319	1B0923

1B0401	1H0493	1F0018	1F0099	1I0335	1G0976	1I0611	1F0386	1E0258	1B0926
1D0771	1C0454	1A0479	1A0035	1I0013	1I0572	1I0859	1F0337	1B0581	1H0609
1D0601	1E0648	1F0809	1G0261	1G0858	1F0845	1I0479	1F0955	1B0674	1H0882
1D0161	1B0253	1F0566	1F0025	1G0894	1F0734	1B0427	1C0276	1G0144	1A0789
1D0811	1B0043	1F0556	1J0698	1G0102	1F0932	1D0968	1G0820	1F0742	1E0675
1D0241	1E0024	1H0669	1J0204	1G0486	1E0780	1D0949	1G0825	1H0082	1F0116
1D0935	1E0824	1B0601	1J0292	1J0688	1G0507	1D0874	1I0104	1A0441	1G0598
1D0865	1G0721	1C0644	1F0311	1H0838	1C0476	1D0913	1I0050	1A0107	1H0453
1F0656	1B0964	1F0108	1F0872	1B0143	1J0449	1D0793	1I0364	1A0267	1H0903
1C0056	1H0413	1F0066	1E0915	1J0664	1J0396	1D0046	1I0875	1A0987	1I0288
1G0441	1H0525	1F0957	1B0623	1J0710	1C0800	1D0625	1I0696	1E0446	1G0549
1G0438	1H0207	1E0619	1A0019	1J0648	1E0483	1D0373	1J0959	1B0037	1A0909
1G0453	1A0356	1F0722	1A0104	1D0774	1E0485	1D0762	1J0007	1I0970	1F0625
1B0800	1C0002	1J0596	1H0416	1D0113	1B0569	1D0830	1I0119	1I0708	1F0604
1C0662	1G0696	1C0699	1E0562	1D0286	1H0129	1D0745	1J0465	1F0973	1B0095
1B0572	1G0688	1C0636	1E0583	1D0195	1H0389	1D0352	1E0706	1F0902	1A0763
1A0914	1G0691	1B0362	1A0280	1D0499	1H0371	1D0701	1J0520	1D0692	1E0553
1I0521	1J0791	1E0466	1A0868	1D0610	1B0148	1C0448	1J0551	1B0316	1B0713
1I0613	1C0162	1E0463*	1H0902	1D0245	1H0827	1A0055	1J0365	1E0048*	1B0114
1I0229	1C0863	1E0802	1B0184	1D0284	1J0801	1A0151	1J0354	1E0991	1A0152
1C0228	1G0012	1H0043	1B0221	1D0501	1J0046	1H0933	1E0345	1E0550	1H0339
1C0200	1G0995	1H0153	1C0909	1H0191	1J0310	1G0856	1H0464	1G0020	1H0391
1I0214	1A0142	1C0625	1G0052	1H0750	1C0516	1F0363	1H0307	1G0802	1C0284
1I0619	1J0966	1C0494	1G0918	1G0312	1C0423	1H0846	1J0108	1J0234	1H0596

Sampled Cookstove 100				
C0263	C2018	C0402	C1058	C1571
C0154	C0791	C1355	C1215	C1632
C1584	C0623	C0468	C1484	C1626
C1958	C2183	C1752	C2225	C1363
C1538	C0035	C1001	C0736	C0328
C1609	C0994	C0882	C1650	C0295
C1918	C1512	C0959	C1356	C1341
C0627	C0309	C0848	C1620	C0327
C0394	C1179	C0038	C1496	C0861
C1879	C0077	C0593	C1482	C1481
C2079	C1757	C1449	C1595	C1824
C0983	C1102	C1096	C0239	C1912
C1229	C2005	C0703	C0396	C2243
C1331	C0989	C1488	C1551	C1919
C0361	C0565	C1660	C1172	C2200

C1391	C1240	C1443	C0536	C0212
C1895	C1517	C1477	C0684	C2183
C0293	C1293	C2261	C0845	C0097
C0035	C0052	C1405	C1176	C1325
C0324	C1263	C0576	C0585	C1634

5. QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The methodology does not account for baseline emissions separately, but instead quantifies emission reductions as a function of the reduction in the amount of non-renewable biomass fuel consumption in the efficient project stoves as compared to baseline stoves.

5.2 Project Emissions

The methodology does not account for project emissions separately, but instead quantifies emission reductions as a function of the reduction in the amount of non-renewable biomass fuel consumption in the efficient project stoves as compared to baseline stoves.

5.3 Leakage Emissions

Leakage is considered as default 0.95 in accordance to section 8.3 of the methodology VMR0006 Ver 1.1

5.4 GHG Emission Reductions and Carbon Dioxide Removals

The improved cookstove is introduced as energy efficiency measure in the project, therefore equations 1 and 2 of the methodology is applied to calculate the net GHG emission reductions.

$$\boldsymbol{ER_y} = \sum_i \sum_j \boldsymbol{ER_{y,i,j}}$$

Equation 1

Where:

i = Indices for the situation where more than one type/model of improved cookstove is introduced to replace three-stone fire

j = Indices for the situation where there is more than one batch of improved cookstove of type i

ER_y = Emission reductions during year y in t CO2e

$ER_{y,i=1,j}$ = Emission reductions by improved cookstove of type i and batch j during year y in tCO2e And,

$$ER_{y,i,j} = B_{y,\text{savings,i,j}} \times NCV_{woodfuel} \times f_{NRB} \times \left(EF_{wf,CO2} + EF_{wf,non\ CO2}\right) \times N_{y,i,j} \times 0.95$$

Where,

$B_{y,savings,i,j}$ = Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y

$NCV_{wood\ fuel}$ = Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)

f_{NRB} = Fraction of woody biomass that can be established as non-renewable biomass f_{NRB} value (India= 91.19%)

$EF_{wf,CO2}$ = CO2 emission factor for the use of wood fuel in the baseline scenario (IPCC default for wood fuel, 112 tCO2/TJ)

$EF_{wf,non-CO2}$ = Non-CO2 emission factor for the use of wood fuel in the baseline scenario (IPCC default for wood fuel, 26.23 tCO2/TJ)

$N_{y,i,j}$ = Number of improved cookstoves of type i and batch j operating during year y

0.95 = Discount factor to account for leakage

The quantify of woody biomass saved $B_{y,savings,i,j}$ due to implementation of improved cookstoves is estimated by the following Equation:

$$B_{y,saving,i,j} = B_{y=1,new,i,survey} \times \left(\frac{\eta_{new,i,j}}{\eta_{old}} - 1\right)$$

Where:

η_{old} = Efficiency of baseline cookstove (10%)

$\eta_{new,I,j}$ = Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y, Alternatively, efficiency may be determined using Equation 5 of applied approved methodology (For instance 1, batch 1 efficiency of Improved cookstove is 33.89% and for batch 2, efficiency of improved cookstove is 34.26%)

$B_{y=1,new,i,survey}$ = Annual quantity of woody biomass used by improved cookstoves in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey. (Monitoring Survey: 2.98 kg /day/ household)

Example of calculation for woody biomass saving

$$B_{y,saving,i,j} = 1.087 \times \left(\frac{33.89}{10} - 1\right)$$

$$B_{y,saving,i,j} = 2.60\ tonnes$$

For emission reductions

$$ER_{y,i,j} = B_{y,\text{savings,i,j}} \times NCV_{woodfuel} \times f_{NRB} \times \left(EF_{wf,CO2} + EF_{wf,non\ CO2}\right) \times N_{y,i,j} \times 0.95$$

$$ER_{y,i,j} = 2.66 \times 0.0156 \times 91.19\% \times (112.0 + 26.23) \times 11{,}522 \times 0.95$$

$$\boldsymbol{ER_{y,i,j} = 66{,}258\ tCO_2e}$$

For projects that are not required to assess permanence risk, complete the table below for the project crediting period:

Vintage period	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)[7]	Reduction VCUs (tCO_2e)	Removal VCUs (tCO_2e)	Total VCUs (tCO_2e)
01-Jan-2023 to 31-Dec-2023	44,634	0	0	44,634	-	44,634
01-Jan-2024 to 31-May-2024	21,624	0	0	21,624	-	21,624
Total	**66,258**	**0**	**0**	**66,258**	**-**	**66,258**

Vintage period	Ex-ante estimated reductions/ removals	Achieved reductions/ removals	Percent difference	Explanation for the difference
01-Jan-2023 to 31-Dec-2023	55,651	44,364	- 20%	During the year only 9,200 improved cookstoves were functional while the estimations were carried out on the 11,522 cookstoves
01-Jan-2024 to 31-May-2024	23,023	21,624	- 6%	Distribution of additional 2,322 cookstoves were carried out from February. Therefore, the estimation and actual ERs are different during the period
Total	78,674	66,258	- 16%	For the year 2023 only 9,200 cookstoves were distributed and additional 2,322 were distributed by February 2024. Therefore, the estimated ERs and achieved ERs are different.

[7] Already incorporated in the emission reduction equation

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

Commercial sensitive information include:

a. Purchase price of cookstove

b. Distribution and maintenance cost for the cookstove

c. Cost to NGO.

This information is confidential and would be shared when asked.

APPENDIX 2: DATA COLLECTION FORM

Cookstove Dissemination	
Surveyor Name (Enter the Unique ID)	
Cookstove Unique ID	
Household Information	
Name	
Husband/Father's Name	
Age	
Address	
Village, Tehsil	
District	
State	
Household Location	
Lat /Long	
Altitude	
Accuracy	
Number of Adult family members in the household	
Number of Children (<6Years) in household	
Government Documents	Voter Id Aadhar Card Pan card Driving License Other.
Document Number	
Is Document Verified	Yes/ No
Photo of the person with cookstove	
Current Cookstove details	Mud stove LPG stove Biogas stove Induction Other
Time is taken for forgoing wood (in hrs.)	
How much firewood is consumed in a day (in kg) in the baseline?	
From how long the cookstove and the firewood is used in the household?	
Declaration	

APPENDIX 3: COOKSTOVE TECHNICAL DETAILS

Cookstove technology has performance-based indicators mentioned below:

Sr.no	Indicators	ICS Performance (Based on section Appendix-1 of the methodology VMR0006)
1	Thermal efficiency	36.42%
2	Carbon monoxide emissions	2.13
3	Fine Particulate Matter Emissions	424.38
4	Safety	77.50
5	Durability	7 year

AGNEEKA ECO-MINI COOKSTOVE TECHNICAL DETAILS

Cook Stove Type/Category	Natural Draft	
Secondary Air Supply	Through Natural Draft	
Stove Material Used	Body	Mild Steel
	Body material thickness	0.6mm
	Combustion chamber	Stainless Steel
	Combustion chamber material thickness	1 mm
	Insulating Material	Thermal Wool
	Insulating Material Thickness	6 to 8mm
	Top Plate	Stainless Steel
	Top Plate Material Thickness	1 mm
Physical structure	External dissemination	Length: - 260mm Width: - 260mm Height: - 248m
	Combustion Chamber Dimension	Diameter: - 125mm

Grate Thickness	2 mm Material Mild Steel	
Weight Of the Stove	3.8 Kg	
Type of Fuel Wood	Firewood	
Feeding Process	Continuous Feeding Front Loading	
Expected life of stove	07 Years	
Guarantee /Warranty Period	2 Years	
Box Dimension	Outer Side Box Dimension	Length: - 300mm Width: - 300mm Height: - 270mm

Batch 2 Cookstove Specifications

FABEARTH

IMPROVED COOK STOVE FE-01 -

TECHNICAL DETAILS :-			
A)	Cook Stove Type Category	Natural Draft	
B)	Secondary Air Supply	Through Natural Draft	
C)	Stove Material Used	Body	GI Sheet
		Body Material Thickness	0.8 mm
		Combustion Chamber	Stainless steel SS 202 2B Grade
		Combustion Chamber Material Thickness	1 mm SS 202 2B Grade
		Insulating Material	Ceramic Thermal Wool
		Insulating Material Thickness	20 to 25 MM
		Top Plate	Stainless steel SS 202 Mirror grade
		Top Plate Material Thickness	1 mm
D)	Physical Structure	External Dimension	Length - 260mm Width - 260mm Height - 245mm
		Combustion Chamber Dimension	Diameter - 120mm

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PLOT NO.39 PALUS INDUSTRIAL ESTATE PALUS, TAL -PALUS, DIST- SANGLI (MAH) 416310

FABEARTH

E)	Grate Thickness	2mm Material GI sheet	
F)	Wight of the Stove	3.5 kg	
G)	Type of Fuel Wood	Firewood 30 to 50 mm diameter	
H)	Feeding Process	Continuous Feeding Front loading	
I)	Expected life of Stove	7 Years	
J)	Guarantee / Warranty Period	1 Year	
K)	Box Dimension	Outer Side Box Dimension	Length - 300mm Width - 300mm Height - 270mm

FABEARTH
Proprietor

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APPENDIX 4: MONITORING SURVEY

Cookstove Auditing

जांचकर्ता का नाम

_____

चूल्हे का नंबर

_____

चूल्हे वितरण की दिनांक

yyyy-mm-dd

_____

_____

लाभार्थी का नाम

_____

पिता / पती का नाम

_____

गाँव का नाम

_____

तहसील

_____

जिला

- ◯ बेतूल
- ◯ छिंदवाड़ा
- ◯ नीवाठी
- ◯ टीकमगढ़
- ◯ छतरपुर
- ◯ शाजापुर
- ◯ धार
- ◯ हरदा
- ◯ देवास
- ◯ होशंगाबाद नर्मदपुरम
- ◯ जालना

घर में वयस्कों की संख्या

_____

घर में बच्चों की संख्या (6 साल से छोटे)

_____

लाभार्थी 1 दिन मे कितनी बार खाना पकाते है

_____

लाभार्थी को 1 दिन मे उन्नत चूल्हे पर खाना पकाने मे कितनी लकड़ी/ ईंधन लगता है की. ग्रा.

_____

लाभार्थी को उन्नत चूल्हे पर खाना पकाने में समय की बचत हो रही है

- ◯ हाँ
- ◯ नहीं

लाभार्थी अभी भी मिट्टी के चूल्हे का उपयोग कर रहे है क्या ?

- ◯ हाँ
- ◯ नही

लाभार्थी उन्नत चूल्हे के उपयोग से स्वास्थ्य मे सुधार हो रहा है

- ◯ हाँ
- ◯ नहीं

लाभार्थी को उन्नत चूल्हे के उपयोग मे कोई समस्या आ रही है क्या ?

_____

लाभार्थी को उन्नत चूल्हे से संबंधित कोई सुझाव हो तो -

_____